

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:
a semiconductor substrate;
source/drain regions that are separately provided on a surface portion of the semiconductor substrate;
a concave portion formed in a channel length direction on the surface portion of the semiconductor substrate between the source/drain regions so as to lineally connect the source/drain regions, a plurality of the concave portions being arranged in a channel width direction;
an insulating film provided on the surface portion of the semiconductor substrate including the concave portions between the source/drain regions; and
a gate electrode provided on the insulating film.
2. A semiconductor device according to claim 1, wherein parts of the semiconductor substrate along all convex portions of a concave/convex structure are depleted.
3. A semiconductor device according to claim 1, wherein plural semiconductor devices having the concave/convex structure are consolidated on one chip with a MOS transistor for a logic circuit unit.